



Air Quality Permitting
Technical Memorandum

Tier II Operating Permit No. 029-00027

ASTARIS DRY VALLEY MINE
SODA SPRINGS, IDAHO

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Project No. T2-010307

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Permit Status:

FINAL

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LIST OF ACRONYMS

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Astaris	Astaris Production LLC
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
HAPs	hazardous air pollutants
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Available Control Technology
MMBtu	million British thermal units
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO _x	nitrogen oxides
NSPS	New Source Performance Standards
O ₃	ozone
OP	operating permit
PM	particulate matter
PM ₁₀	particulate matter with an aerodynamic diameter of a nominal 10 micrometers or less
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
SIP	State Implementation Plan
SO ₂	sulfur dioxide
T/hr	tons per hour
T/yr	tons per year
UTM	universal transverse mercator
VOC	volatile organic compound

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01.404.04, *Rules for the Control of Air Pollution in Idaho (Rules)* for Tier II operating permits.

PROJECT DESCRIPTION

Astaris Production LLC (Astaris) has requested changes to the Tier II operating permit issued April 17, 2000, for its Dry Valley phosphate ore mine. The changes do not involve the installation of any new or modified equipment. This project is considered an amendment to the Tier II permit.

FACILITY DESCRIPTION

The Dry Valley Mine consists of two open pits that are excavated using excavators and dump trucks. The overburden is stockpiled for reclamation and the phosphate ore is hauled to a storage area. The ore is processed through screens and a crusher, and is then transferred to a storage bin. The processed ore is then loaded into railcars. A used-oil boiler is used to provide space heating.

The emission sources at the facility are as follows:

Table 1.1 – EMISSION SOURCES

Permit Section	Source Description	Emissions Control(s)
3	Burnham boiler, model 4FW-277-50-GO-PF, 1.86 million British thermal units per hour, oil and liquid petroleum gas-fired	None
4	Rotary impact crusher and material handling	None

SUMMARY OF EVENTS

April 18, 2001	The Department received a request dated April 16, 2001, to modify the Tier II operating permit issued April 17, 2000.
January 24, 2002	The Department determined the application to be complete.

PERMIT HISTORY

The following is a summary of the permit files available to Environmental Quality Management Inc.

In 1991	Permit To Construct 042-0027 was issued to the FMC Corp. for the Dry Valley Mine.
April 23, 1997	A revised permit to construct (PTC) was issued to FMC to reflect current operations.
April 17, 2000	A Tier II operating permit was issued to reflect the new ownership of the Dry Valley Mine.

DISCUSSION

1. Emissions Estimates

The emissions estimates for the facility have not changed since the April 23, 1997, PTC revision. The emissions are summarized in Table 1; for details, refer to the technical analysis dated March 13, 1997, from George Fink, DEQ Air Quality Engineer, and Dan Pittman, DEQ Air Quality Permits Manager.

Table 1. Criteria Pollutants Emission Summary

Source Description	PM ₁₀		NO _x		CO		SO ₂		VOC	
	lb/hr ³	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Burnham boiler ¹	0.262	1.15	0.329	1.44	0.0851	0.372	0.830	3.63	0.0022	0.0095
Crushing operations ²	9.500	11.90								

¹ Based on firing rate of 16.6 gallons per hour (gal/hr) of used oil and 1 gal/hr of liquified petroleum gas

² Based on 1,200 tons per hour (T/hr) production rate and 2,500 hours per year (hrs) hr/yr of operation (3 million tons per year (T/yr))

³ Pounds per hour

2. Modeling

Modeling was conducted for the Burnham boiler stack as part of the April 23, 1997, PTC revision. The modeling was used to establish used-oil concentration limits for arsenic, cadmium and chromium. For details, refer to the March 13, 1997, technical analysis referenced above.

3. Area Classification

The Astaris Dry Valley Mine is located near Soda Springs in Caribou County, which is in AQCR 61. Caribou County is classified as attainment or unclassifiable for all state and federal criteria air pollutants.

4. Facility Classification

The Dry Valley Mine is not a major facility as defined in IDAPA 58.01.01.006.55 or 008.10. This mine is not a designated facility as defined in IDAPA 58.01.01.006.27 per the applicant's certification that it is not a phosphate rock processing plant. The facility is classified as a synthetic minor source because actual and potential emissions of regulated air pollutants are less than 100 T/yr if Astaris complies with the federally-enforceable emission limits in the permit.

5. Permit Conditions

The emission limits, monitoring, recordkeeping, and reporting requirements from the previous Tier II operating permit remain largely unchanged. The format and general provisions have been changed to be consistent with DEQ's latest Tier II permit template.

Per the applicant's request, the arsenic limit for used oil has been changed from 0.07 parts per million (ppm) to 0.7 ppm. From page 3 of the March 13, 1997, technical analysis, it is clear that the 0.07 ppm limit in the April 23, 1997, PTC was a typographical error.

The applicant also requested minor changes to the used-oil recordkeeping requirement (from gallons per day to gallons per month), the timing of the used-oil analysis, and the addition of a definition of "property boundary" for purposes of fugitive emission observations at the property boundary. The requested changes improve the implementation of the permit and have been made as requested.

7. AIRS

AIRS/AFS^a FACILITY-WIDE CLASSIFICATION^b DATA ENTRY FORM

AIR PROGRAM	SIP ^c	PSD ^d	NSPS ^e (Part 60)	NESHAP ^f (Part 61)	MACT ^g (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
POLLUTANT							
SO ₂ ^h	B						A
NO _x ⁱ	B						U
CO ^j	B						U
PM ₁₀ ^k	B						U
PM (Particulate) ^l	SM		SM				A
VOC ^m	B						U
THAP (Total HAPs) ⁿ	NA						NA
			APPLICABLE SUBPART				
			OOO				

^a Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

^b AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 T/yr threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).

^c State Implementation Plan

^d Prevention of Significant Deterioration

^e New Source Performance Standards

^f National Emission Standards for Hazardous Air Pollutants

^g Maximum Achievable Control Technology

^h Sulfur Dioxide

ⁱ Nitrogen Oxides

^j Carbon Monoxide

^k Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers

^l Particulate Matter

^m Volatile Organic Compounds

ⁿ Hazardous Air Pollutants

FEES

Fees apply to this facility in accordance with IDAPA 58.01.01.470. The facility is subject to permit application fees for this revised Tier II OP of \$500.

RECOMMENDATIONS

Based on the review of the application materials and all applicable state and federal regulations, staff recommends the Department issue a revised Tier II OP to Astaris Production LLC. A public comment period is not required for this revision.

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